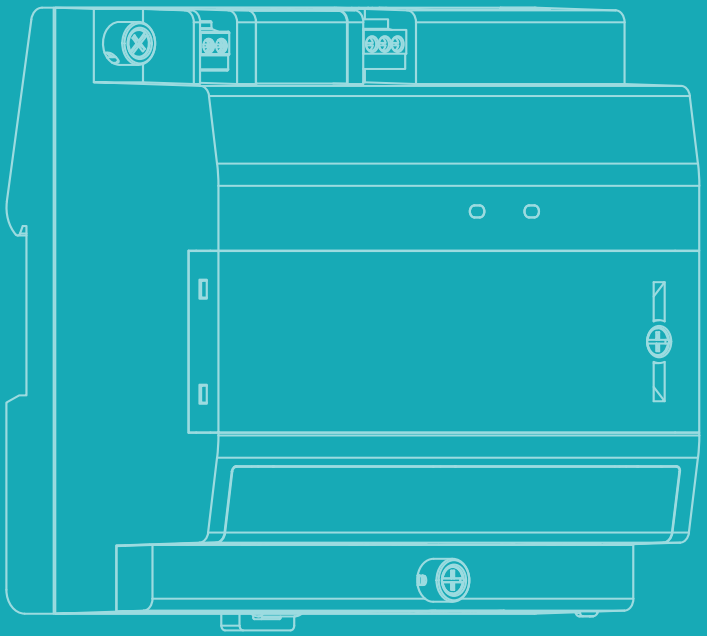
AcuIOM
Universal I/O Module

QUICK SETUP GUIDE



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MODELS	**AcuIOM-1:** 8 Analog Input, 2 Analog Output
	AcuIOM-2: 16 Analog Input, 4 Analog Output
	AcuIOM-3: 14 Digital Input, 2 Digital Output, 2 Relay Output
	AcuIOM-4: 28 Digital Input, 4 Digital Output, 2 Relay Output

Important Safety Notice

Please read this document carefully prior to installation, operation, and maintenance of the AcuIOM. Accuenergy is not responsible or liable for any damage or injury caused by improper installation and/or operation.

- Installation and maintenance must be performed by qualified personnel in accordance with local electrical codes.
- Prior to wiring and repair, the equipment must be de-energized and grounded. Always de energize and ground the equipment before wiring or maintenance.

The following symbols can be found either in this document or on the product.

WARNING ALERT: Indicates a hazardous circumstance which may result in severe injury or death..

NOTE: Provides additional information before action shall be taken by the user.

Legal Notice

This AcuIOM Quick Setup Guide provides informational and operational guidance regarding the use of the device. While effort has been made to ensure the accuracy, reliability, and completeness of the information at the time of publication, Accuenergy assumes no responsibility for any errors, omissions, or misunderstandings in this document and reserves the right to modify its content at any time without prior notice.

Users should verify with Accuenergy or their authorized local representative that the document in use is the latest version and strictly adhere to the installation, operation, and maintenance procedures specified herein. Accuenergy shall not be held liable for any damages or consequences resulting from improper use or failure to comply with the provisions of this document.

1. Overview

Follow these steps to commission the module:

1. Mount the module on a DIN rail.
2. Connect the control power.
3. Depending on the model, wire the supported I/O terminals, which may include AI, AO, DI, DO, and RO.
4. Connect to the communication interface using RS485, Ethernet, or USB.
5. Turn on the power and check the status LEDs.
6. Connect using the Acuview 2 software.

Factory default communication settings allow for immediate access.

2. Operating Environment

WARNING ALERT

Ensure that the following specifications are met. Failure to do so may affect accuracy, impair system function, damage hardware, or pose safety risks.

PARAMETER	SPECIFICATION
Location	Indoor Use
Installation Environment	Dry and Dust-Free Location
Electromagnetic Conditions	Avoid Strong Electromagnetic Interference
Operating Temperature	–25 °C to +70 °C (-13 °F to 158 °F)
Operating Humidity	0 % to 95 % (Non-Condensing)
Maximum Operating Altitude	2000 m
Pollution Degree	2

3. Appearance and Dimensions

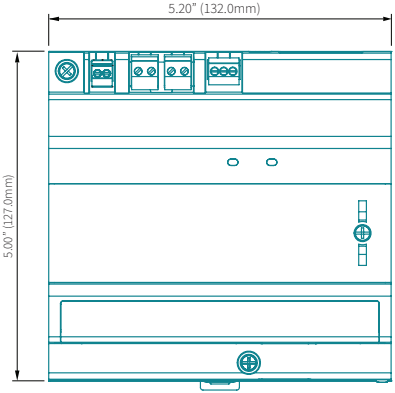
The AcuIOM is a compact, DIN rail mounted I/O device designed for installation inside electrical panels or control cabinets.

The AcuIOM I/O module enclosure includes:

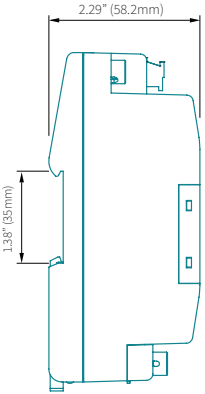
1. Removable plug-in terminal blocks
2. Front-mounted status LEDs
3. Rear-mounted DIN rail clips

Refer to the diagrams for overall dimensions. The physical appearance and terminal layout may vary depending on the AcuIOM model.

FRONT VIEW



SIDE VIEW



4. Module Installation

The AcuIOM is designed to be mounted on a standard 35mm DIN rail.

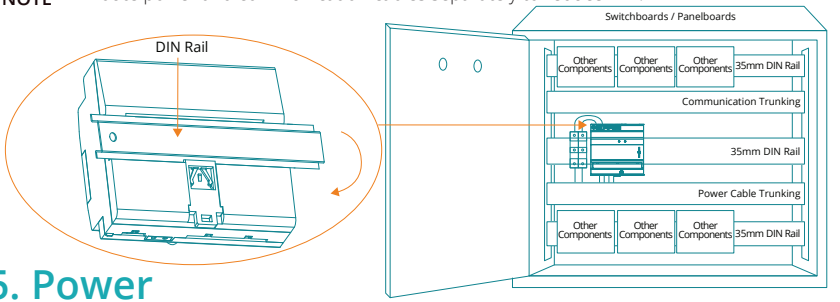
DIN Rail Mounting Procedure

1. Pull out the two mounting clips at the bottom of the device.
2. Place the module onto the DIN rail.
3. Push the clips back until a click is heard.

Ensure the device is firmly seated and stable.

NOTE

Maintain sufficient clearance around the module for wiring and removal.
Route power and communication cables separately to reduce EMI.



5. Power

WARNING ALERT

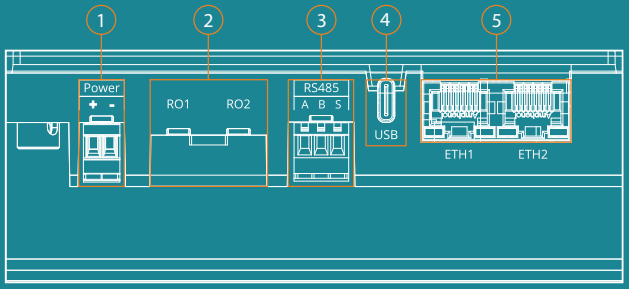
Disconnect all power sources before wiring. Improper wiring may result in equipment damage or personal injury.

Ensure correct polarity when wiring power terminals.

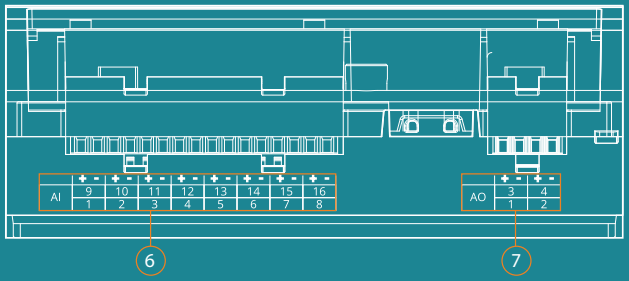
The AcuIOM uses low-voltage DC control power.

PARAMETER	SPECIFICATION
Voltage Range	12-36 VDC
Maximum Power Consumption	6 W
Supply Type	LPS / SELV

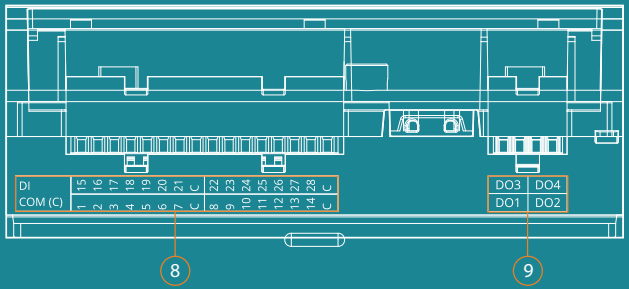
6. Terminals and Wiring



TOP VIEW



BOTTOM VIEW



BOTTOM VIEW

TERMINAL		DESCRIPTION	MODEL
1	Power (+ / -)	Control Power Input	All Models
2	RO	Relay Outputs	AcuIOM-3, AcuIOM-4
3	RS485 (A / B / S)	Modbus RTU, BACnet MS/TP	All Models
4	USB	Power Input or USB Modbus RTU	All Models
5	ETH1 / ETH2	Ethernet (Modbus TCP/IP, BACnet/IP)	All Models
6	AI	Analog Inputs	AcuIOM-1, AcuIOM-2
7	AO	Analog Outputs	AcuIOM-1, AcuIOM-2
8	DI	Digital Outputs	AcuIOM-3, AcuIOM-4
9	DO	Digital Outputs	AcuIOM-3, AcuIOM-4

Terminal-by-terminal wiring details are provided in the User Manual.

6.1 Wiring Guidelines

WARNING ALERT

Disconnect all power sources before wiring. Improper wiring may result in equipment damage or personal injury.

NOTE

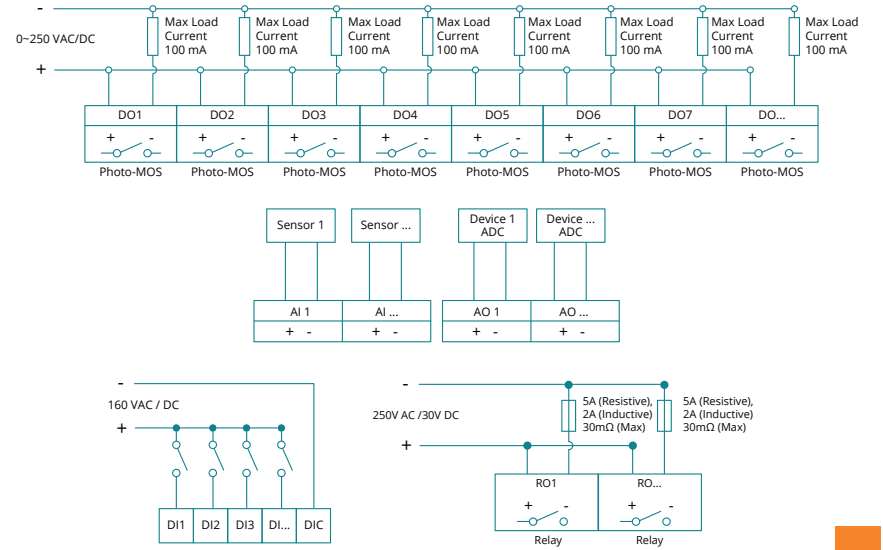
- Disconnect all power sources before wiring. Improper wiring may result in equipment damage or personal injury
- Use appropriate cable sizes as specified
- Separate high-noise and signal wiring

TERMINAL	SCREW TORQUE
Power (+ / -) RS485 (A / B / S) AI, DI, DO, AO	0.2 N ·m
RO	0.66 N ·m

All I/O channels are galvanically isolated as specified.

TERMINAL	FUNCTION	TERMINAL TYPE	TERMINAL APERTURE
Power (+, -)	Power Input Port	Plug-In Type	1.5 mm²
A, B, S	RS485 Communication Port	Plug-In Type	1.5 mm²
USB	Power Input Port for MCU or USB Modbus RTU	Plug-In Type	Dedicated Line
ETH1, ETH2	Ethernet	Plug-In Type	Dedicated Line
AI	Sensor Input of Voltage or Current Signal	Plug-In Type	1.5 mm²
DI	Used As Status Input or Pulse Counter	Plug-In Type	1.5 mm²
AO	Protocol-Controlled Output, Converted into Voltage or Current Signal	Plug-In Type	1.5 mm²
DO	Protocol-Controlled Output	Plug-In Type	1.5 mm²
RO	Protocol-Controlled Output	Plug-In type	2.5 mm²

6.2 Circuit Diagrams - I/O Wiring Connections

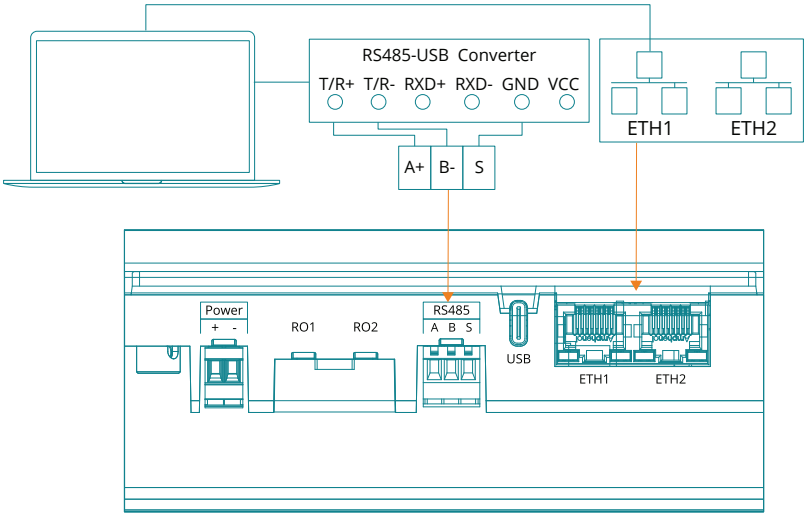


7. Basic Configuration

The AcuIOM does not require front-panel configuration. Basic setup and verification are performed using the Acuview 2 software. Use default communication settings for initial connection.

8. Communication

The AcuIOM supports multiple communication methods.



8.1 Ethernet Communication

The AcuIOM features dual 10/100 Mbps Ethernet Ports (non-independent) and supports Modbus TCP/IP and BACnet/IP protocols. It also allows for direct connection to Acuview 2 software using Modbus TCP/IP.

DEFAULT ETHERNET SETTINGS	
IP Address	192.168.1.254
Subnet Mask	255.255.255.0
Gateway	192.168.1.1

8.2 RS485 Communication

The AcuIOM supports Modbus RTU and BACnet MS/TP protocols, with terminals provided for A (+), B (-), and S (Shield) connections. Use a USB-RS485 converter cable when connecting to a PC.

DEFAULT RS485 SETTINGS	
Slave Address	1
Baud Rate	19,200
Parity	None1 (No Parity, One Stop Bit)

8.3 USB Communication

The USB port in AcuIOM may be used for powering the AcuIOM and supports USB Modbus RTU communication. The USB is intended primarily for commissioning and testing.

DEFAULT USB SETTINGS	
Slave Address	1
Baud Rate	19,200
Parity	None1 (No Parity, One Stop Bit)

9. I/O Functions

This section provides a high-level summary of the I/O capabilities

Digital Input (DI)	External Input Voltage up to 160 VAC/DC Support Status Monitoring and Pulse Counting
Digital Output (DO)	External supply up to 250 VAC/DC Maximum current: 100mA
Relay Output (RO)	Form A Relay Contact Maximum Switching: 250 VAC/30 VDC Maximum Current: 5A (Resistive)
Analog Input (AI)	Voltage or Current Input Accuracy: 0.2%
Analog Output (AO)	Voltage or Current Output Accuracy: 0.5%

Scaling, mapping, and control behavior are configured using the Acuview 2 software.

10. Specifications

COMMUNICATION	
RS485	
Baud Rate	1200-115200 bps
Protocols	Modbus RTU, BACnet MS/TP
ETHERNET	
Type	10/100 Mbps
Protocols	Modbus TCP/IP

POWER SUPPLY	
Universal	LPS or SELV
LOW VOLTAGE DC CONTROL POWER	
Operating Range	12~36 VDC
Maximum Burden	6 W

DIGITAL INPUT	
LOW VOLTAGE DC CONTROL POWER	
Maximum External Power Supply	160 VAC / DC
Maximum Frequency	50 Hz with a 50% Duty Cycle (10 ms ON, 10 ms OFF)
On-State Voltage	Above 15 VDC
Off-State Voltage	Below 5 VDC
Isolation Voltage	2500 VAC

DIGITAL OUTPUT	
LOW VOLTAGE DC CONTROL POWER	
External Power Supply	0~250 VAC/DC
Maximum Current	100 mA
Maximum Output Frequency	25 Hz
Isolation Voltage	2500 VAC

RELAY OUTPUT	
Universal	1 Form A
LOW VOLTAGE DC CONTROL POWER	
Maximum Switching Voltage	250 VAC, 30 VDC
Maximum Load Current	5A (Resistive)
Isolation Voltage	2500 VAC

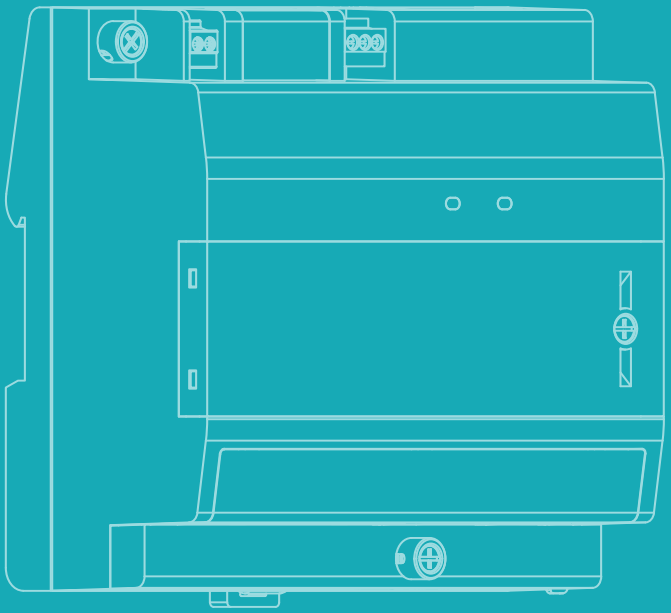
ANALOG INPUT	
LOW VOLTAGE DC CONTROL POWER	
External Power Supply	0-20 mA / 0-10 VDC
Accuracy	0.2 %
Isolation Voltage	500 VDC

ANALOG OUTPUT	
LOW VOLTAGE DC CONTROL POWER	
External Power Supply	0-20 mA / 0-10 VDC
Accuracy	0.5 %
Isolation Voltage	500 VDC

OPERATING ENVIRONMENT	
Operating Temperature	-25 °C to 70 °C -13 °F to 158 °F
Storage Temperature	-40 °C to 85 °C -40 °F to 185 °F
Relative Humidity	0 % to 95 %
Altitude	0~2000 m
Pollution Degree	2
Location/Mounting	Indoor Use Only

11. Function List

PART	FUNCTION
LED	Power: Power Indicator; Run: Running Indicator
Timer	Real Time Clock (Year, Month, Date, Hour, Minute, Second)
SOE log	Loop Recording of 200 Entries
Communication Ports	RS485 Modbus RTU, BACnet MS/TP
	Ethernet Modbus TCP/IP
	USB Modbus RTU
DI	Used as Status Input or Pulse Counter
DO	Protocol-Controlled Output
AI	Sensor Input of Voltage or Current Signal
AO	Protocol-Controlled Output, Converted into Voltage or Current signal.
RO	Protocol-Controlled Output
USB	Power Supply for MCU
Configuration Function	Flexibly Adapt Settings Based on On-Site Applications.



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Specs Subject To Change Without Notice.